



VOLUME XVI, ISSUE 1

THE OZARK OBSERVER

NATIONAL WEATHER SERVICE
SPRINGFIELD MO

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NWS SPRINGFIELD WILL HOST OPEN HOUSE

By Andy Boxell



The tornado simulator was a big hit at the Mall.

The Springfield National Weather Service Forecast Office will hold its 2010 Open House on Saturday, October 23 from 9:00 AM until 3:00 PM. The public is invited to come out, visit with the local staff, and learn about the mission and activities of your National Weather Service! In addition, the NWS will be holding a canned food drive in conjunction with the Open House. Visitors should feel free to bring a few non-perishable food items for the Ozark Food Harvest!

Activities at the open house will include tours of our operations area, where forecasts, watches, warnings, and advisories for 37 counties in southwestern Missouri and southeastern Kansas are created and issued, demonstrations of weather balloon launches, and information on local programs such as aviation forecasting, climate, fire weather forecasting, and hydrology, as well as information on radar and satellite data.

In addition, there will be information on the NOAA All Hazards Weather Radio Network and new tools on our website, including the Enhanced Hazardous Weather Outlook. There will also be information on tornado safety and weather preparedness.

Our office is located just west of the Springfield-Branson National Airport complex, at **5805 West Highway EE**, Springfield, MO. More information on the open house, including a map to the office, is available at www.weather.gov/sgf.



CONTRIBUTING MEMBERS

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* Editors

Contributing Authors:

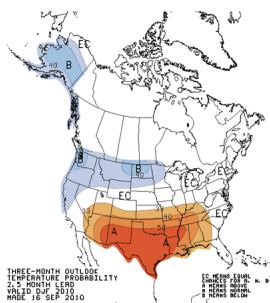
- **Larry Dooley**
- **Gene Hatch**
- **Ryan Kardell**
- **William Davis**
* Meteorologist In Charge

WHAT TO EXPECT THIS WINTER IN THE OZARKS

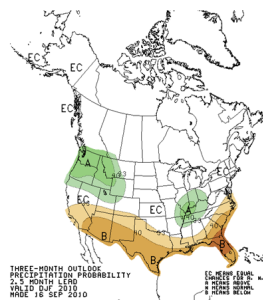
By Gene Hatch

Many people ask meteorologists, "So, how much snow can we expect this winter?", "Is this going to be a cold winter?" or "What's the forecast for the winter season?"

Long range outlooks and forecasts provide the NWS meteorologists with a general idea of what the weather will be. Forecasters at the Climate Prediction Center (CPC) look at periods of weeks, months, or even a year in the future. They use computer models designed to make predictions as much as a year away. These models use recent pattern trends along with climatology as a basis for their predictions.



For the upcoming winter season, the (CPC) is indicating that much of the Missouri Ozarks and southeast Kansas has an increased chance of above normal temperatures from November through February. The precipitation forecast for the same period indicate equal chances of above, below and normal precipitation.



This forecast is heavily influenced by the on-going La Nina, which is expected to persist through the winter, and favors warmer than normal temperatures during winter in the Ozarks,

along with higher than normal precipitation.



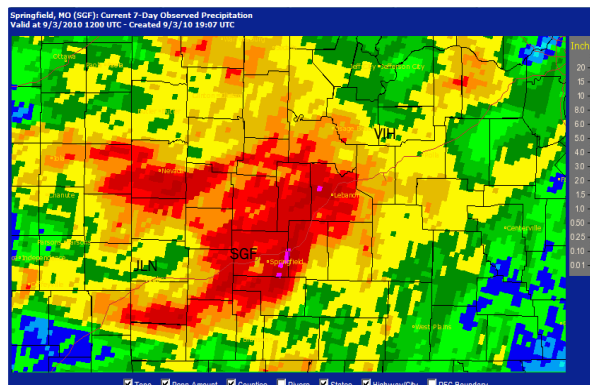
HEAVY RAINS BRING A WET START TO SEPTEMBER:

By: Megan Terry

While September usually marks the beginning of our secondary severe weather season in the Ozarks, this year the beginning of September will be remembered for the heavy rains that fell across the region. Periods of heavy rain from the morning of September 1st to the evening of September 2nd produced over one foot of rain northeast of Clever, MO for this two-day period. Portions of south-east Greene County, including Springfield, and northeast Christian County received six to ten inches of rain, most of which fell on the 1st.

So you may be asking, "How did this happen?". Two factors favorable for heavy rainfall were already in place over the Ozarks prior to the onset of the heavy rains. A very moist air mass was present near the surface, with dewpoint temperatures in the 70s. In the mid-levels of the atmosphere (10,000-25,000 feet), a plume of moisture originating in the tropics was being pulled northward across the central U.S.

During the overnight hours of August 31st and early morning of September 1st, a storm complex developed and moved across northern Missouri. The rain-cooled outflow from these storms moved south into southwest Missouri and stalled along a line roughly from Nevada to Springfield. This caused storms to repeatedly develop along and north of the boundary through the morning of the 1st.



Total rainfall for Sept. 1-2, 2010

Another outflow boundary set up from Neosho to Nixa during the afternoon of the 1st, and led to another round of heavy rainfall. On the afternoon and evening of the 2nd, a final round of heavy rainfall developed as a cold front moved across the Ozarks.

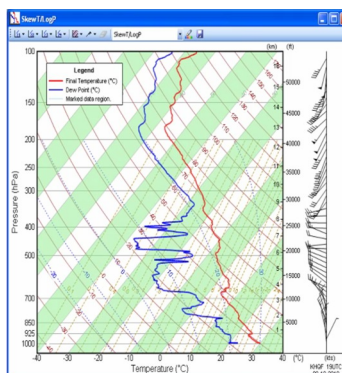
The heavy rainfall flooded numerous low water crossings and led to 12 water rescues in Springfield, mainly in the southern half of the city. Twenty-four hour rainfall records were set on the 1st at Springfield with 4.62 inches, and Vichy-Rolla with 1.82 inches.

TECHNOLOGY: RADIOSONDE UPGRADES COMING SOON

October will be an exciting month here at NWS Springfield. We will be testing a new build of software for our upper air observation program. The Radiosonde Replacement System (RRS) Build II software will give our upper air observers some new tools to help forecasters gather better information from live flights and will also help produce higher quality observations.

One of the biggest updates to the software will be the ability to view live flight data in the Skew-T format, which is very useful to forecasters when evaluating moisture and instability when the data is being gathered. The old software build did not allow for a Skew-T plot to be generated before the flight had terminated. More timely assessments of the stability and moisture content will be especially beneficial prior to and during severe weather events.

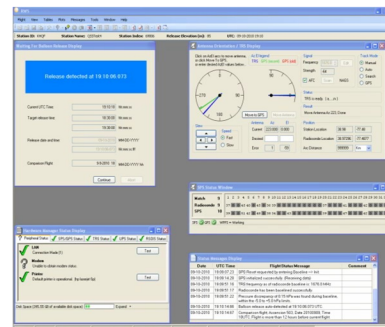
The user interface has been streamlined significantly. Observers will now have a much more intuitive interface for editing data. This will make it much easier to perform data edits during adverse weather conditions. This task was very demanding at times with the old software build. The new interface will allow the observer to perform more time-efficient data quality control efforts during the flight.



By: Ryan Kardell

The image to the left shows a Skew-T plot, which shows temperature (red) and dewpoint (blue) as the balloon rises from the surface (bottom) to around 100,000 feet. The lines on the right show wind speed and direction.

The image to the right shows the new layout of the user interface that meteorologists will use to monitor incoming data, as well as the location of the radiosonde during its ascent.





COOPERATIVE OBSERVER PROGRAM

By Larry Dooley



The Cooperative Observing Station at Truman Dam. This is a full station with an automated temperature set, an 8" rain gage, an evaporation pan and system, and a Fischer-Porter climate rain gage.

The Cooperative Observer Program (COOP) is the Nation's weather and climate observing network of, by, and for the people. More than 11,000 volunteers take observations on farms, in urban and suburban areas, National Parks, sea-shores, and mountaintops. The data is representative of where people live, work and play.

The first network of cooperative stations was set up as a result of the act of Congress in 1890 that established the Weather Bureau, but many COOP stations began operation long before that time. John Campanius Holm's weather records, taken without the benefit of instruments in 1644-45, were the earliest known observations in the United States. Subsequently many individuals, including George Washington, Thomas Jefferson, and Benjamin Franklin maintained weather records. Thomas Jefferson maintained an almost unbroken record of weather observations between 1776 and 1816, and George Washington took his last observation just a few days before he died.

Volunteer weather observers contribute their time so that observations can provide the vital information needed. These data are invaluable in learning more about the floods, droughts, heat and cold waves affecting us all. COOP data plays a critical role in efforts to recognize and evaluate the extent of human impacts on climate from local to global scales. In the area under the supervision of WFO Springfield, Missouri there are a total of 93 active COOP stations. Each of these stations meets specific needs for data used in hydrology, climatology or other meteorology needs. Each station has different equipment to help meet their particular needs.

NEW STAFF MEMBER JOINS NWS SPRINGFIELD

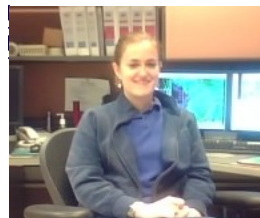
Michael Griffin joined the Springfield NWS team in late September as a General Forecaster. Mike began his career with the NWS as a Meteorologist Intern at the Lake Charles, Louisiana Forecast Office. Before joining the NWS, Mike was a television meteorologist for several years following his graduation from Texas A&M University.

Mike had his fair share of hurricanes while on the Gulf Coast. He went through Hurricanes Katrina and Rita back in 2005 and Hurricanes Gustav and Ike back in 2008. Mike also enjoys studying all kinds of weather including tornadoes, flash flooding, and snow. In his spare time, he likes the outdoors which includes hiking and being out on the lake. He can't wait to explore the Ozarks!



NWS SPRINGFIELD SAYS FAREWELL TO TWO STAFF MEMBERS

We said good-bye to two staff members this summer. Kelsey Angle departed NWS Springfield in July to take a Senior Forecaster position at NWS Topeka. He is the second staff member in as many years to join the NWS team at Topeka and is very happy with his responsibilities.



Christina Crowe received a promotion to General Forecaster at NWS Huntsville this summer and departed our office in September. She had worked there previously as a student COOP and did graduate work at the University of Alabama-Huntsville, so she already has ties to northern Alabama.

We wish Kelsey and Christina the best of luck and success at their new offices!

JUNIOR OBSERVER PAGE

Autumn and Winter Word Find!

Search for these weather words:

-  Snow
  Autumn
-  Wind
  Winter
-  Sleet
  Blizzard
-  Ice
  Lightning
-  Cold Front
  Frost



N	N	S	N	O	W	Q	F	X	B
C	W	K	I	X	G	E	S	Z	L
S	S	K	W	C	S	U	H	U	I
O	R	C	I	C	E	W	T	I	Z
G	N	I	N	T	H	G	I	L	Z
N	R	P	T	W	I	N	D	B	A
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A	T	T	H	T	T	G	W	O	D
R	J	A	U	E	A	O	F	M	W
S	M	L	E	S	R	G	Y	R	H
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O	S	S	S	T	C	F	Q	A	T

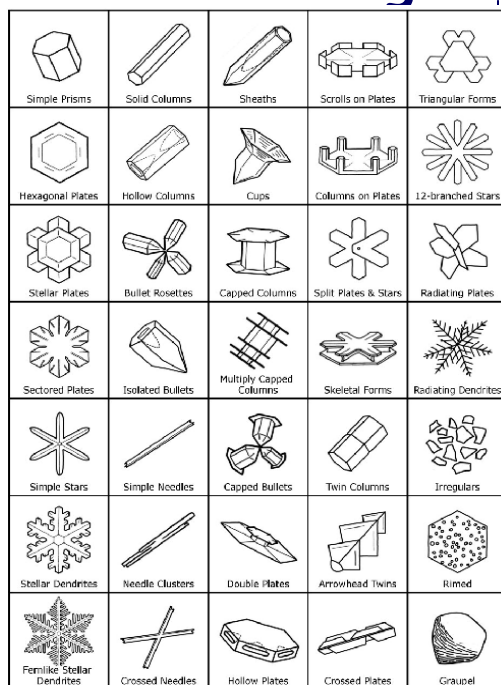
Activity: Snowflake Watching

Snowflakes come in many different shapes, depending on the temperature in which they formed, and the amount of water vapor they formed in.

On a snowy day, take a sheet of dark construction paper to collect the snowflakes. Then, using the chart on the right, see which snowflake shape best fits the ones you caught.


You may want to use a magnifying glass to see a larger view of the snowflakes. However, you should keep light away from the magnifying glass, since the heat from the light is more concentrated and could melt your flakes.


Snowflake chart source:
www.snowcrystals.com




Types of Snowflakes

Did You Know???

 The coldest air temperature ever recorded on earth was -128.5°F at Vostok, Antarctica on July 21, 1983.

 The heaviest seasonal snowfall in the United States was recorded at Mt. Baker, WA during the winter of 1998-1999 when 1, 140 inches (95 ft) fell.

 For Springfield, the coldest temperature on record is -29°F , recorded on Feb. 12, 1899. The most snowfall? The winter of 1911-1912, when 54.5 inches were recorded.



WINTER WEATHER SAFETY GUIDE



Major hazards crop up during the winter that can impact you and your family, including slick roads, power outages, frostbite, hypothermia and even in some cases, severe thunderstorms. Below are some safety tips for each type of danger to you and your family.



- Snow and ice are often indirect killers, claiming numerous lives and resulting in many injuries on the Nation's roads and highways.
- When snow or ice is accumulating on area roadways, the best advice is to avoid travel if at all possible. If you absolutely must travel, be sure to reduce speed and leave plenty of room to stop.
- 4-wheel drive can be of some assistance on snow covered roads, but is of little assistance on ice. Be sure to not over-estimate the abilities of SUVs, trucks, and other 4-wheel drive vehicles.
- Also, carry emergency supplies with you, including blankets, a flashlight, a small shovel, jumper cables, and a cell phone. Always be sure to let someone know of your intended travel plans.



- The Ozarks are one of the most ice storm-prone regions in the United States. When ice storms strike, power outages can often last for days or even weeks, bringing with them potentially deadly hazards.
- If you come across downed power lines, NEVER touch them. These lines can still have thousands of volts of electricity flowing through them.
- Many people turn to generators to provide power during ice storms. Generators should never be used indoors, where carbon monoxide can quickly kill. Place generators outdoors, in a well-ventilated location.
- Never use camping stoves indoors to heat or cook due to the risk of carbon monoxide poisoning.



- Along with snow and ice, the bitter cold can present its own set of hazards, including hypothermia and frostbite.
- During the winter, be sure to dress appropriately for the temperature. This includes dressing in layers, and wearing a hat and gloves.
- Hypothermia occurs when the body's temperature drops to dangerous levels. The signs often begin with uncontrollable shivering, and eventually worsen to delirium and loss of consciousness. Hypothermia is potentially deadly, and anyone showing those symptoms should get immediate medical attention.
- Frostbite is characterized by discolored, often grey, flesh after being exposed to extreme cold. Suspected frostbite should also be treated immediately by a physician.



- Severe thunderstorms, including tornadoes, have occurred during the winter months, and will occur again at some point in the future. Always be aware of rapidly changing weather conditions, including any watches or warnings that have been issued. Always have a NOAA Weather Radio available.
- One of the deadliest tornadoes in the last 10 years occurred near Evansville, IN on November 6, 2005, striking around 2:00 AM. The tornado killed 25 people, few of which were aware of the tornado warning that had been issued.
- Locally, the January 7-8 severe weather outbreak spawned at least 33 tornadoes across the area, along with high winds, large hail, and flash flooding.

NWS SPRINGFIELD WINTER WEATHER PRODUCTS

Hazardous Weather Outlook: Issued daily at 6 AM and 1 PM to highlight the potential of any hazardous weather over the next few days, including winter storms, extreme cold, severe weather, flooding, and lightning.

Winter Storm Watch: Weather conditions are favorable for the development of winter weather over the next 36-72 hours, including snowfall accumulations in excess of six inches in a 24-hour period, significant sleet accumulation, and ice accumulations greater than one quarter of an inch.

Winter Storm Warning: A high probability of snow accumulations greater than 6 inches within the next 36 hours, or a combination of snow, blowing snow, sleet, and/or ice

that is significant enough to result a threat to life and property.

Ice Storm Warning: A high probability of accumulations of 1/4 of an inch or greater of ice within the next 36 hours, likely resulting in major disruptions to travel and power infrastructure.

Winter Weather Advisory: Snow accumulations of less than 6 inches, or a combination of snow, blowing snow, sleet and/or ice resulting in minor travel hazards.

Wind Chill Advisory: An expected wind chill of -10°F to -24°F .

Wind Chill Warning: An expected wind chill of -25°F or lower.

VISIT WWW.WEATHER.GOV/SGF
FOR ALL OF OUR WINTER WEATHER
PRODUCTS

Keep this page for your Winter
Weather Reference!